



## Summary of EPA Surface Water Sampling of Select Metals

### Results to Date

#### Gold King Mine Blowout

August 7, 2015

EPA initiated a sampling effort on August 5, 2015, to assess the impacts of the blowout at the Gold King Mine near Silverton, CO. Surface water quality samples were collected from 7 locations (see Attachment 1). Two of these locations were on Cement Creek and 5 of these were on the Animas River in Colorado. These locations were selected based on the fact that an historical dataset already exists at these locations and they will serve thus as good indicators of conditions before, during and after the event. Data depicted are the results of samples collected over two days. These samples were delivered to the lab on August 6<sup>th</sup>. Results were available and evaluated on August 7<sup>th</sup>.

Attachment 2 provides both an analysis of the dissolved concentrations of select metals over time and operational milestones. Metals selected are indicative of trends of all metals analyzed and can be related to historical averages for these water bodies.

The graphs in Attachment 2 demonstrate trends in concentrations of select metals that have been detected historically in both Cement Creek and the Animas River. Each graph represents the trends in those concentrations between August 5, and August 6, 2015. Each graph also provides the average historical (pre-blowout) concentration of those metals. Historical concentrations are not available for the 32nd Street Bridge location. The blowout occurred late in the morning on August 5, 2015. The contaminant plume moved down stream at approximately 4 miles per hour. The trends over time and location represent the movement of the contamination and the return of the Animas River to conditions before the event.

The first graph provides data on Cement Creek, the downstream from the blowout (CC48). Concentrations throughout the first day following the blowout are above historical averages for the copper, lead and manganese. However, the graphs demonstrate a decrease in those concentrations over the 24 hour period.

The second graph provides data on the Animas River above the town of Silverton (A68) and above Cement Creek. This graph demonstrates relatively unchanging metals concentrations that are at or below historical averages.

The third graph demonstrates the data from the Animas River just below the town of Silverton (A72). The graph shows an initial spike in metals concentrations with levels returning to historical averages by the morning of August 6, 2015.

The fourth graph demonstrates the data from Bakers Bridge on the Animas River just above

Durango, CO. Since this location is about 20 miles from Silverton, the metals concentrations are increasing above historical averages. But, it is believed that subsequent data collection activities will demonstrate a decrease in concentrations similar to those seen at upstream locations.

The fifth graph is of the 32<sup>nd</sup> Street Bridge sampling location. At the time the samples were collected, it does not appear that the contamination had yet reached this sampling location.

It is believed that subsequent data collection activities and results in these locations and in additional downstream locations will demonstrate an increase in metals concentrations followed by a decrease to baseline.

## **INITIAL vs FINAL**

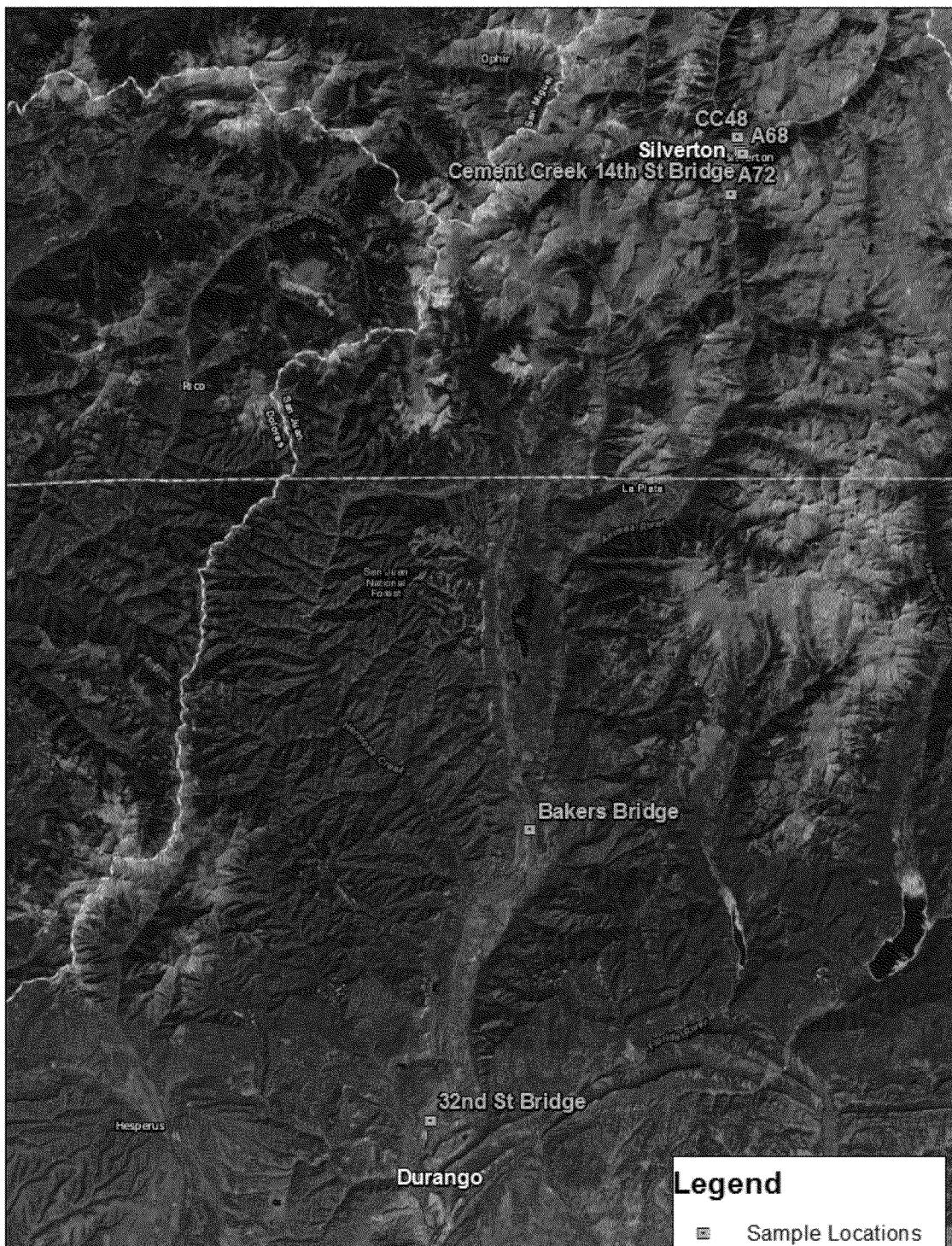
EPA receives INITIAL results from its laboratory 1-2 days after the samples are collected. These INITIAL results are designated as FINAL once they have been validated. This validation process usually takes 7-10 days. EPA is releasing INITIAL data to the public but it is important to note that results are sometimes changed during the validation process.

## **ATTACHMENTS**

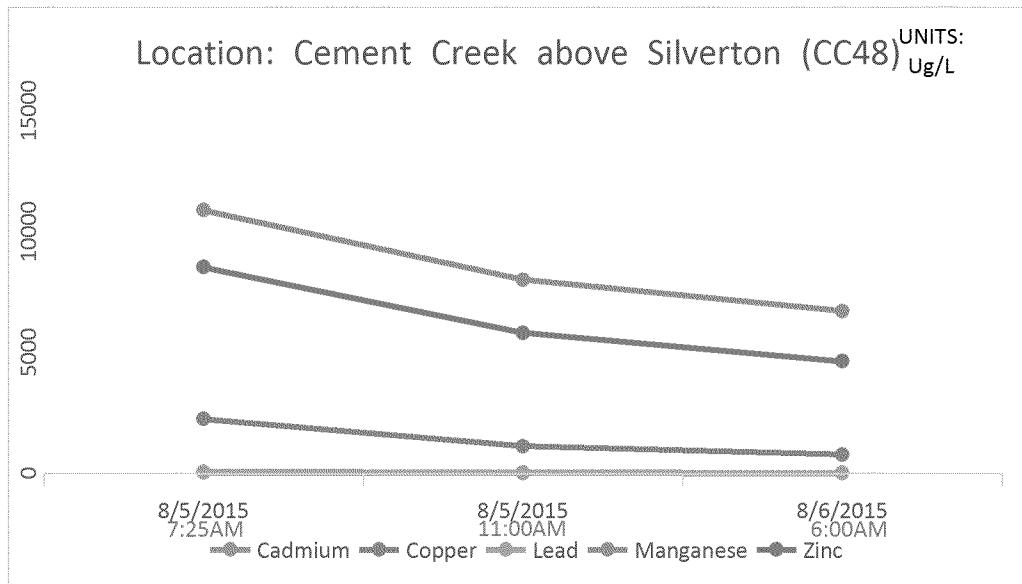
Attachment 1: Sampling Locations

Attachment 2: Trends and Milestones

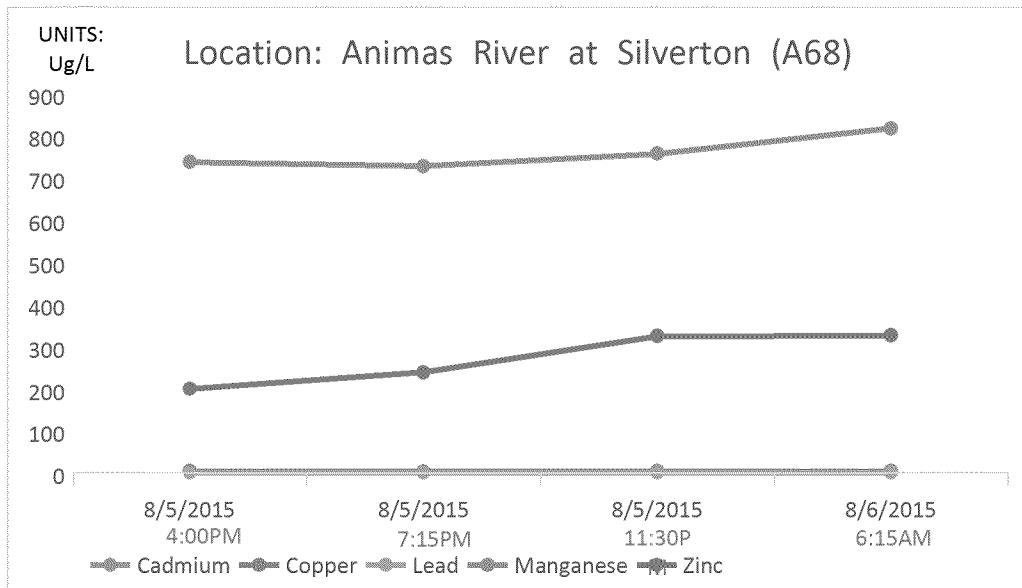
## Attachment 1: EPA Sampling Locations



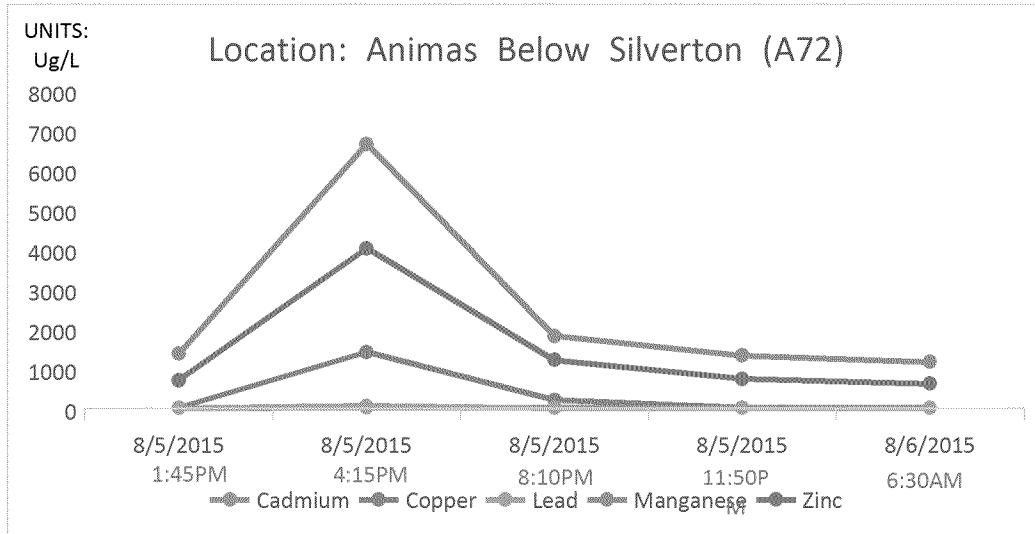
## Attachment 2: Trends



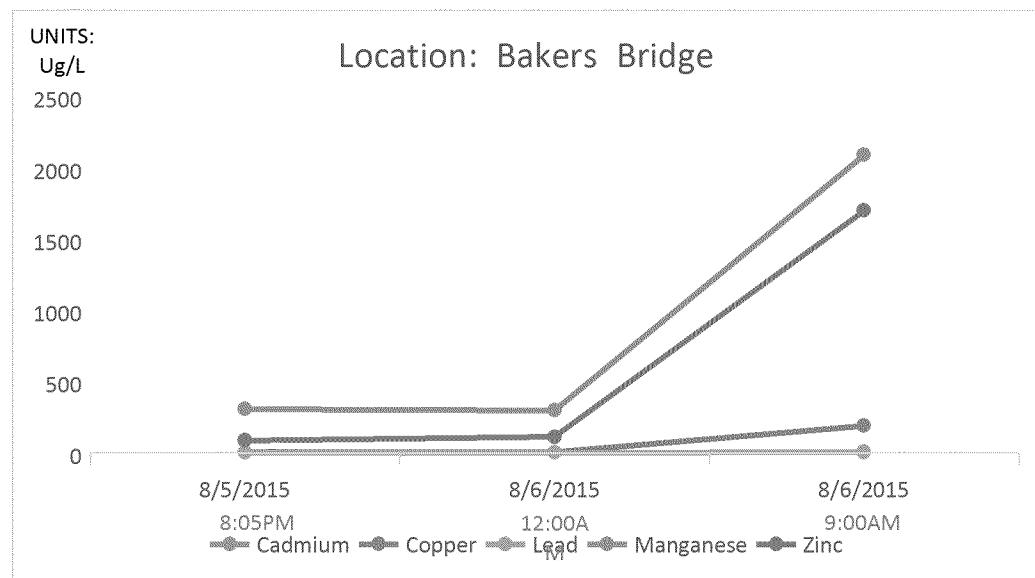
Baseline	Cadmium	Copper	Iron	Lead	Manganese	Zinc
Average	4.31	73.93	7870	14.71	1952	1251



Baseline	Cadmium	Copper	Iron	Lead	Manganese	Zinc
Average	3	8.5	272	2.6	1940	581



Baseline	Cadmium	Copper	Iron	Lead	Manganese	Zinc
Average	2	12	3070	4.34	1859	815



Baseline	Cadmium	Copper	Iron	Lead	Manganese	Zinc
Average	6.5	73	611	11.15	938	94

